



## **NORTH CAROLINA** Department of Transportation

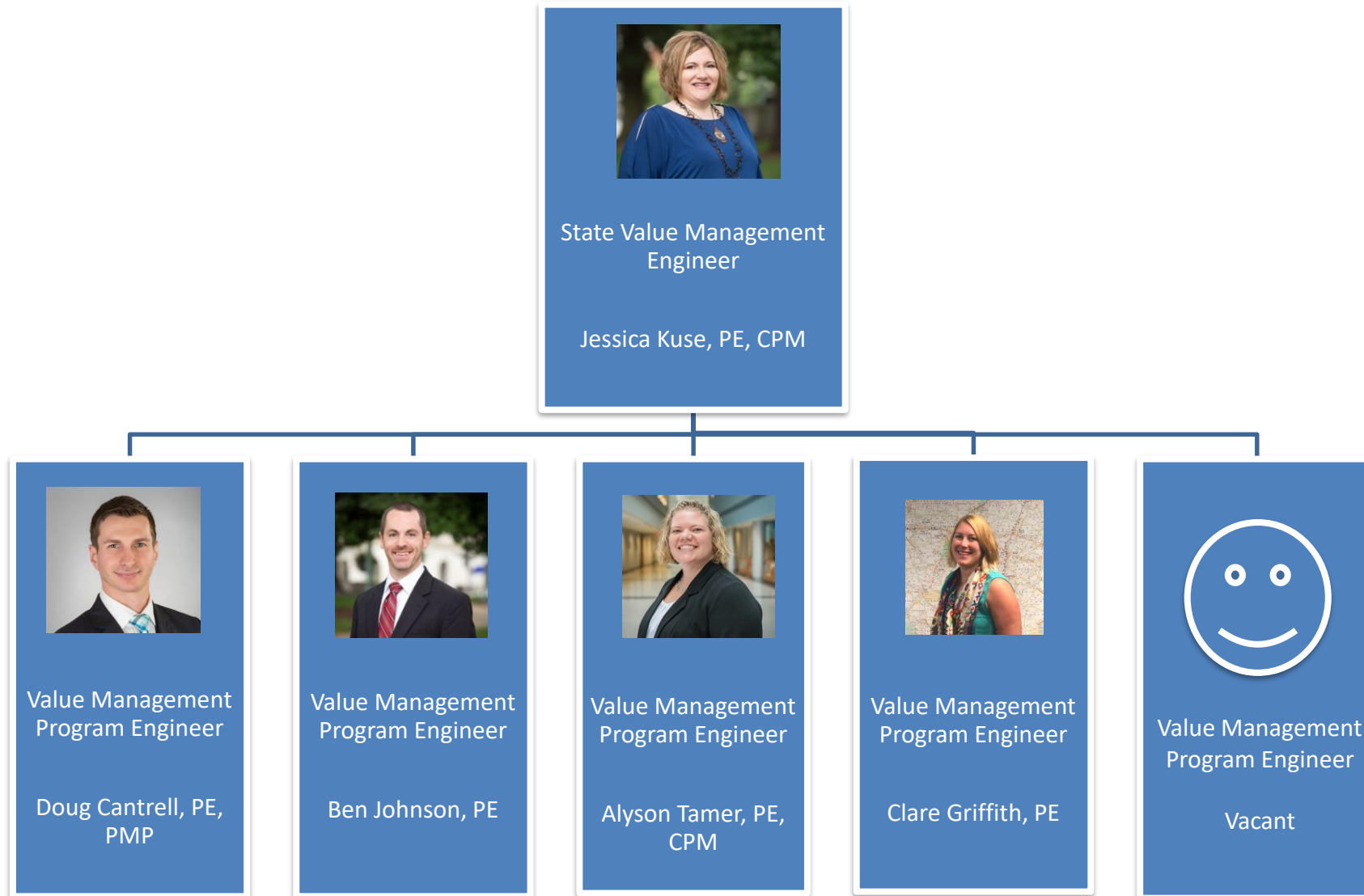


# Value Management Overview

Doug Cantrell, PE, PMP

AGC Conference – March 14, 2018

# Value Management Team



# Value Management Office

*The Value Management Office has 7 programs  
and offers the following:*

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- Value Engineering Proposal Reviews

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- Product Evaluation And Approved Products List Support

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- Constructability Reviews

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- Constructability Reviews
- Resource Conservation Coordination



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- Constructability Reviews
- Resource Conservation Coordination
- Value Engineering Studies



# Value Management Office

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- Value Engineering Proposal Reviews
- Product Evaluation And Approved Products List Support
- Constructability Reviews
- Resource Conservation Coordination
- Value Engineering Studies
- Post Construction Assessment Data Collection

# Value Management Office

*The Value Management Office has 7 programs and offers the following:*

- Value Engineering Proposal Reviews
- Product Evaluation And Approved Products List Support
- Constructability Reviews
- Resource Conservation Coordination
- Value Engineering Studies
- Post Construction Assessment Data Collection
- Risk Assessments

# Value Engineering Proposals

- 2018 Standard Specifications for Roads and Structures
- Value Management Office coordinates the review

## Benefits

- Contractor specific equipment or methods
- Potential cost reduction
- Potential time savings
- Potential use of innovations



Doug Cantrell, PE, PMP  
919-707-4814

# Value Engineering Proposal

- Savings split 50/50 between NCDOT and the Contractor.
- \$10,000 minimum threshold
- Contractor covers cost associated with proposal submission



# Value Engineering Proposal

**NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH**

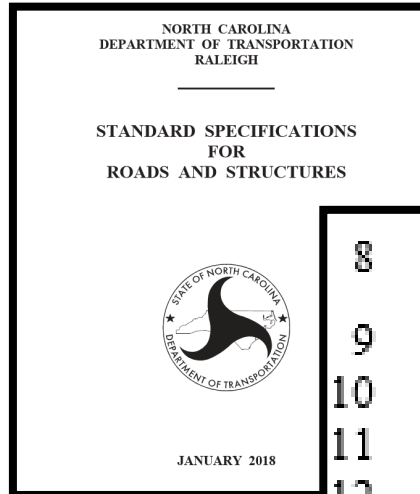
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**STANDARD SPECIFICATIONS  
FOR  
ROADS AND STRUCTURES**



**JANUARY 2018**

# Value Engineering Proposal



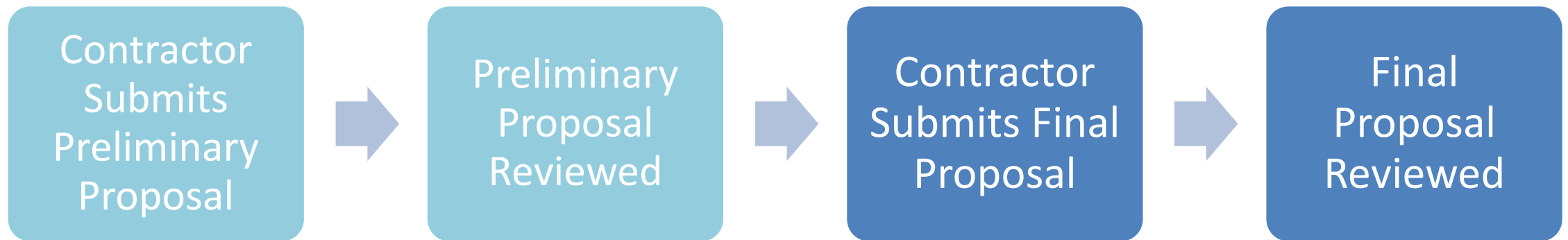
## 8 104-12 VALUE ENGINEERING PROPOSAL

9 This value engineering specification is to provide an incentive to the Contractor to initiate,  
10 develop and present to the Department for consideration, any cost reduction proposals  
11 conceived by him involving changes to the contract. This specification does not apply unless  
12 the proposal submitted is specifically identified by the Contractor as being presented for  
13 consideration as a Value Engineering Proposal (VEP). Submittals that propose material  
14 substitutions of permanent features, such as, but not limited to, changes from rigid to flexible  
15 or flexible to rigid pavements, concrete to steel or steel to concrete bridges will not be  
16 considered acceptable VEPs. Depending on the complexity of evaluation and  
17 implementations, VEPs that provide for a total savings before distribution of less than  
18 \$10,000 may not be considered.

# VEP Process

OPTIONAL

REQUIRED





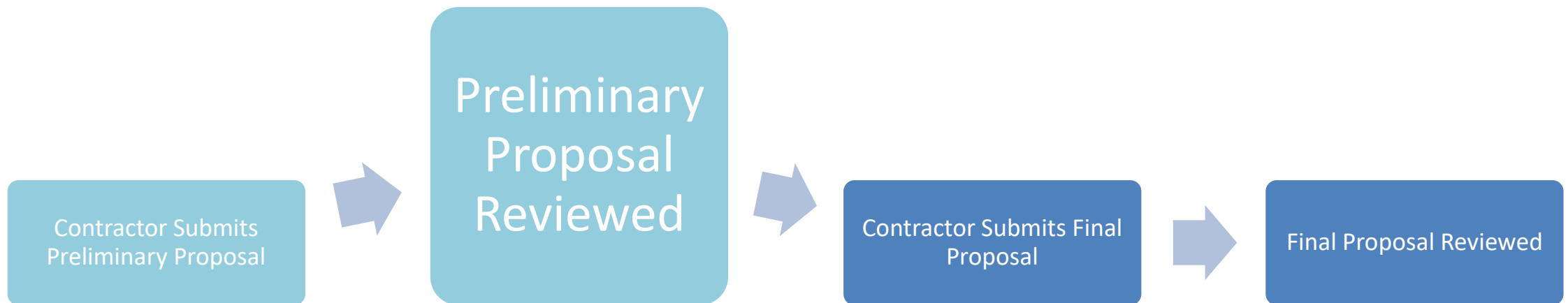
# VEP Process

- Description of the proposed change
- Estimated cost savings with breakdown
- Optional
- Sketch, mark-ups on existing plan sheets



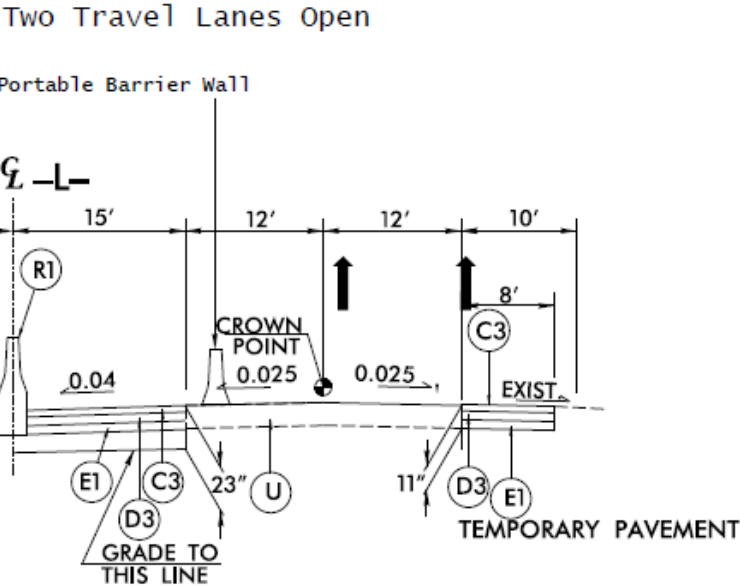
# VEP Process

- Reviewed by Resident Engineer, Value Management Office, and Technical Units
- Review the validity of the VEP
- If accepted – Contractor prepares Final Proposal

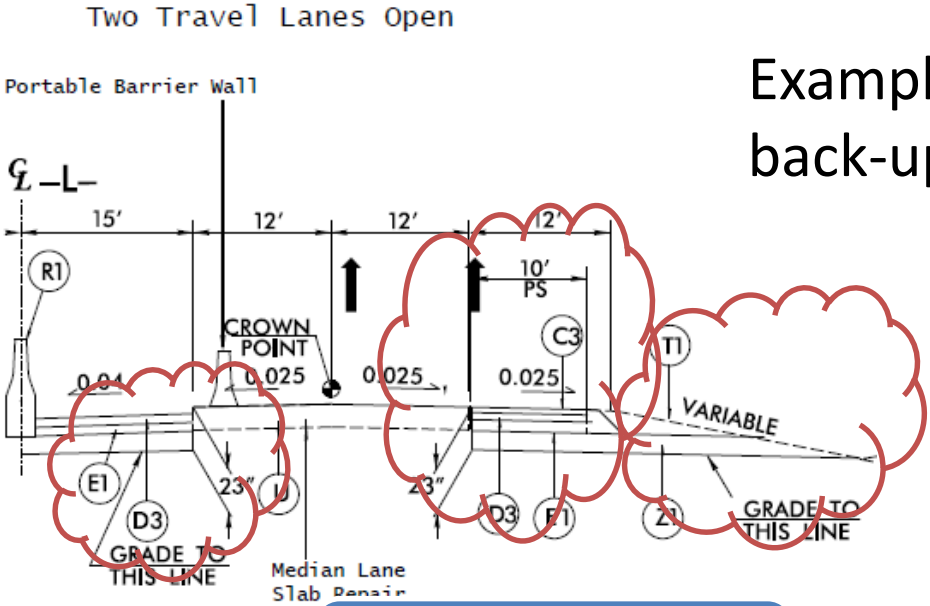


# VEP Process

## ORIGINAL PROJECT DETAILS



## CONTRACTOR PROPOSED CHANGES



Example of submitted VEP back-up documents.

Contractor Submits Final Proposal

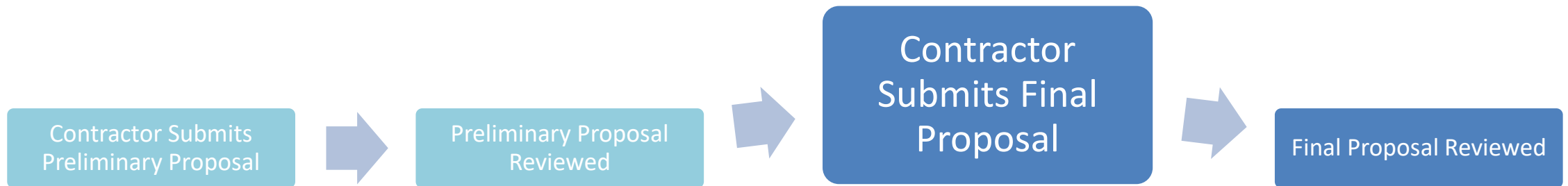
Contractor Submits Preliminary Proposal

Preliminary Proposal Reviewed

Final Proposal Reviewed

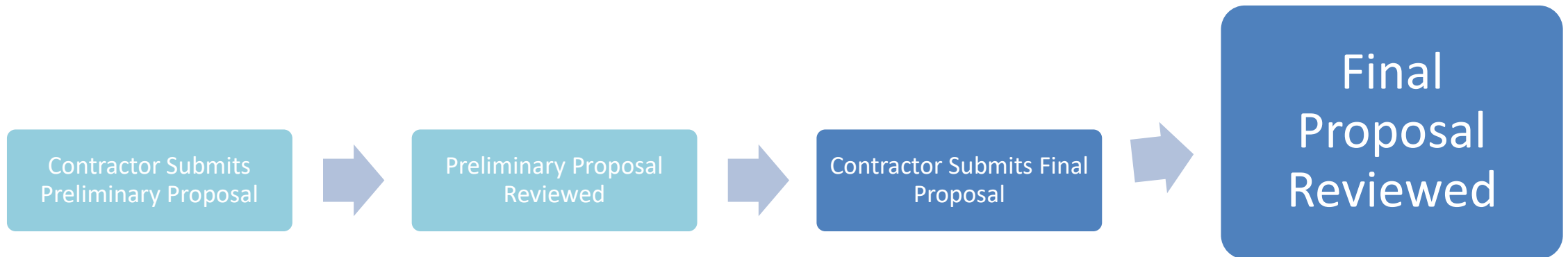
# VEP Process

- The Final Proposal must include
  - Design Calculations
  - Contract Plan Sheet Modifications
  - Contract Document Changes
  - Cost Savings Estimate based on Contract Line Items



# VEP Process

- Reviewed by the Division Resident Engineer, Value Management Office, Technical Unit
- Goal is a 20 Business Days for turn around
- Final approved by Construction
- Becomes Supplemental Agreement



# Value Engineering Proposal Program

- Have questions about the process? Call or email us:

919-707-4814

ValueManagementUnit@ncdot.gov

# Product Evaluation Program

- Comprehensive evaluation of products
- Maintains Approved Products List (APL)
- Seeks new products, innovations, and technologies

## Benefits

- One door for product introductions
- Approved list of vetted products
- Product related support for field personnel

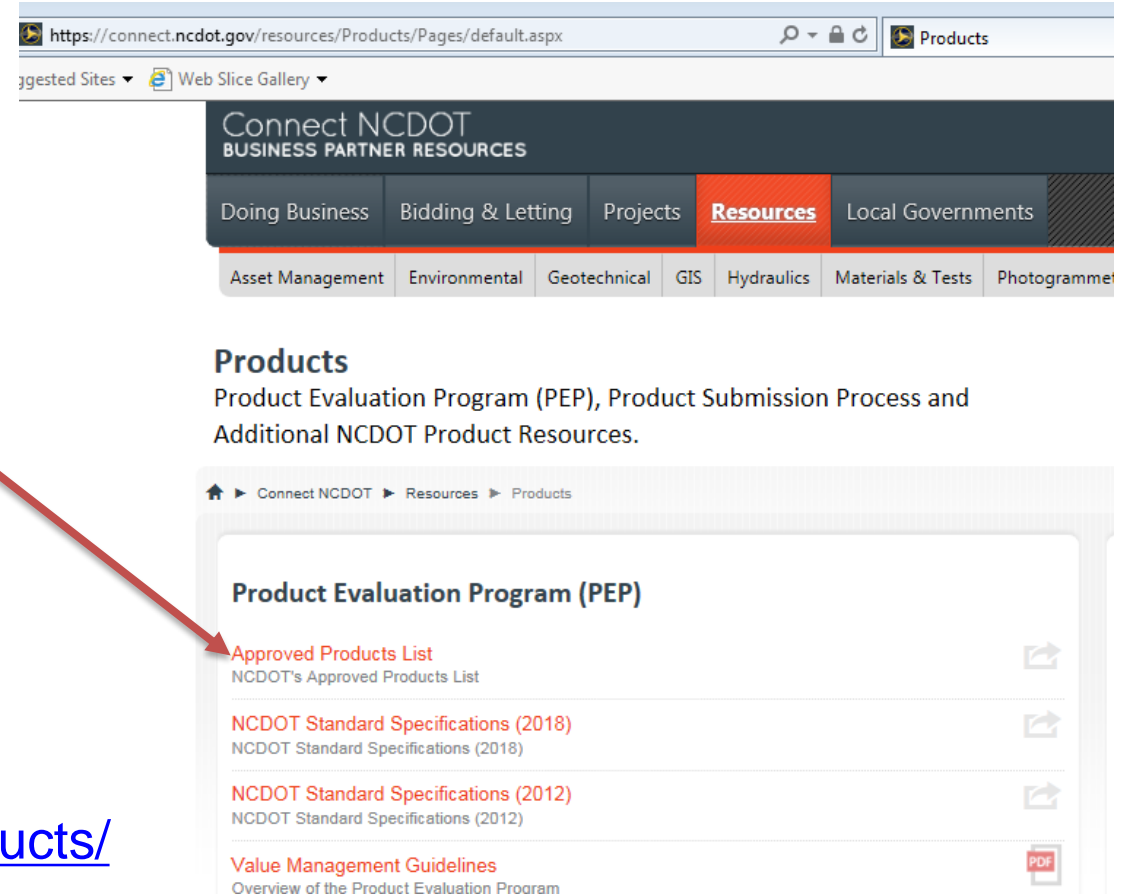


Ben Johnson, PE  
919-707-4801



# Product Evaluation Program

## Approved Product List



APL: <https://apps.ncdot.gov/vendor/approvedproducts/>

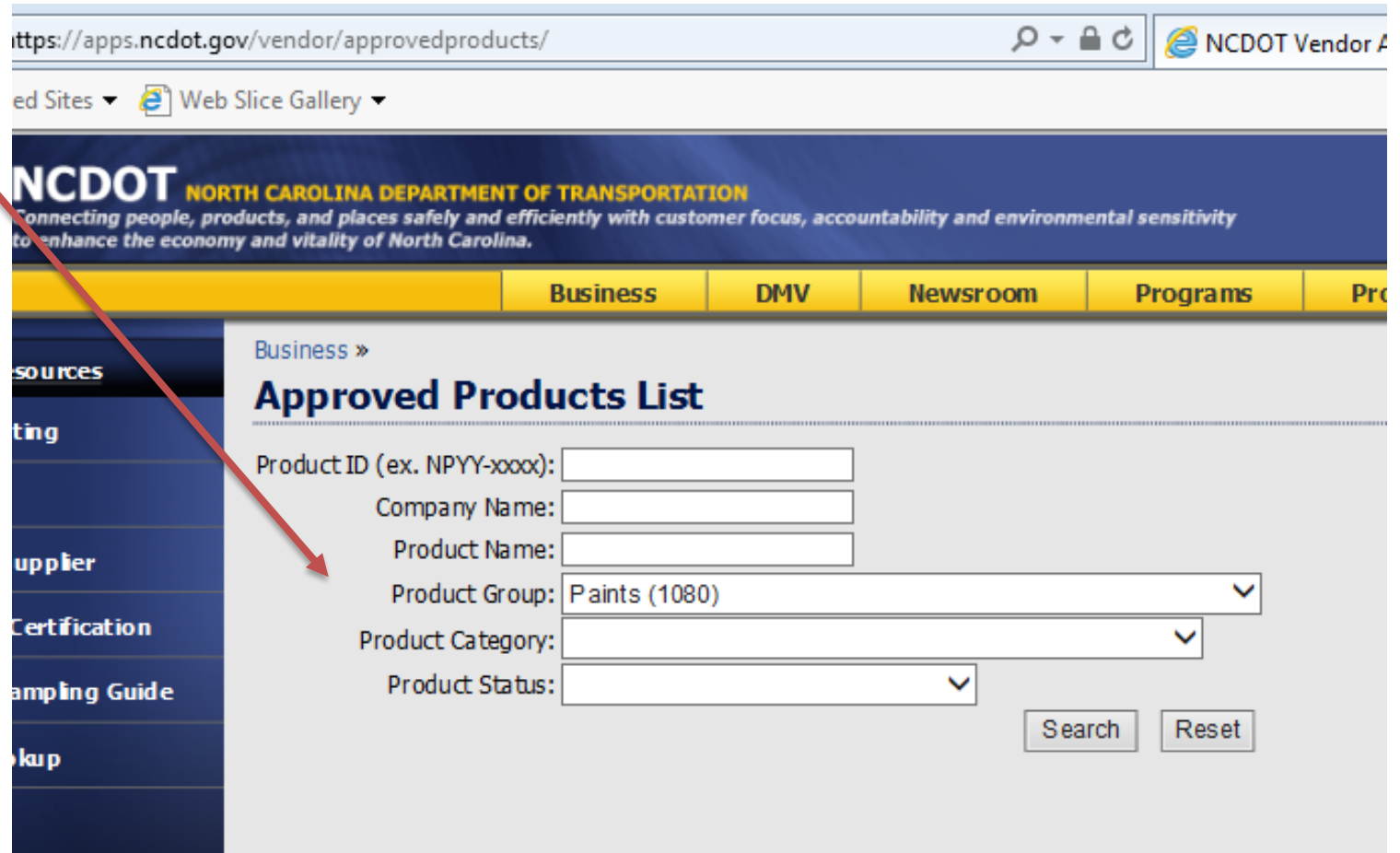
Product Website: [www.connect.ncdot.gov/resources/Products/Pages/default.aspx](http://www.connect.ncdot.gov/resources/Products/Pages/default.aspx)

# Product Evaluation Program

## Approved Product List

### Statuses

- 1) Approved
- 2) Approved for Provisional Use
- 3) Accepted for Field Trial



https://apps.ncdot.gov/vendor/approvedproducts/

ed Sites ▾ Web Slice Gallery ▾

**NCDOT** NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
Connecting people, products, and places safely and efficiently with customer focus, accountability and environmental sensitivity  
to enhance the economy and vitality of North Carolina.

Business DMV Newsroom Programs Pro

Business »

### Approved Products List

Product ID (ex. NPYY-xxxx):

Company Name:

Product Name:

Product Group: Paints (1080) ▾

Product Category:  ▾

Product Status:  ▾

Search Reset

# Product Evaluation Program

## Approved Products List

Product ID (ex. NPY-xxxx):

Company Name:

Product Name:

Product Group:

Product Category:

Product Status:

<u>Product ID</u>	<u>Plant ID</u>	<u>Company Name</u>	<u>Product Group</u>	<u>Product Category</u>	<u>Product Name</u>	<u>Model Number</u>	<u>Product Status</u>	<u>Description</u>
<a href="#">NP99-3423</a>	PM6	PPG Protective and Marine Coatings	Paints (1080)	Self-Curing Inorganic Zinc (1080-5)	Dimetcote 9		Approved	Dimetcote 9
<a href="#">NP99-3424</a>	PM5	Carboline Company	Paints (1080)	Coal Tar Epoxy Paint (1080-6)	SSPC Paint 16 1080-8		Approved	SSPC Paint 16 1080-8
<a href="#">NP99-3425</a>	PM5	Carboline Company	Paints (1080)	Self-Curing Inorganic Zinc (1080-5)	Carbozinc 11		Approved	Carbozinc 11
<a href="#">NP99-3426</a>	PM5	Carboline Company	Paints (1080)	Waterborne Paint (1080-9)	Water Reducible Acrylic Paint 1080-12&13		Approved	Water Reducible Acrylic Paint 1080-12 & 13
<a href="#">NP99-3436</a>	PM4	RCB Elite Coating Company	Paints (1080)	Coal Tar Epoxy Paint (1080-6)	SSPC Paint 16 1080-8		Approved	SSPC Paint 16 1080-8
<a href="#">NP99-3438</a>	PM4	RCB Elite Coating Company	Paints (1080)	Waterborne Paint (1080-9)	Water Reducible Acrylic Paint 1080-12&13		Approved	Water Reducible Acrylic Paint 1080-12 & 13
<a href="#">NP99-3439</a>	PM10	International Protective Coatings	Paints (1080)	Coal Tar Epoxy Paint (1080-6)	SSPC Paint 16 1080-8		Approved	SSPC Paint 16 1080-8
<a href="#">NP99-3442</a>	PM7	Sherwin-Williams Co.	Paints (1080)	Coal Tar Epoxy Paint (1080-6)	SSPC Paint 16 1080-8		Approved	SSPC Paint 16 1080-8
<a href="#">NP99-3444</a>	PM7	Sherwin-Williams Co.	Paints (1080)	Waterborne Paint (1080-9)	Water Reducible Acrylic Paint 1080-12&13		Approved	Water Reducible Acrylic Paint 1080-12 & 13

# Product Evaluation Program

## Approved Products List

Product ID (ex. NPY-xxxx):

Company Name:

Product Name:

Product Group:

Product Category:

Product Status:

<u>Product ID</u>	<u>Plant ID</u>	<u>Company Name</u>	<u>Product Group</u>	<u>Product Category</u>	<u>Product Name</u>	<u>Model Number</u>	<u>Product Status</u>	<u>Description</u>
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# Product Evaluation Program

[Business](#) » [Product Listing](#) »

## Product Listing Detail

**Product ID (ex. NPYY-xxxx):** NP99-3426

**Plant ID:** PMS

**Product Name:** Water Reducible Acrylic Paint 1080-12&13

**Model Number:**

**Description:** Water Reducible Acrylic Paint 1080-12 & 13

**Comments:**

**Manufacturer/Distributor:** Carboline Company

**Approval Responsibility:** M&T

**Group:** Paints (1080)

**Category:** Waterborne Paint (1080-9)

**Brand:** Water Reducible Acrylic Paint 1080-12&13

**Status:** Approved

**Manufacturer Contact:**

**Distributor Contact:**

# Product Evaluation Program

- How are products reviewed?





# Product Evaluation Program

- If a Vendor comes to you to sell a Product – ask them to call us at

**919-707-4808**

- Have a question about a product? Call or email us at:

**ProductEvaluation@ncdot.gov**

- Have an innovative idea to solve a problem? Interested in bringing a particular product to the Department? Call or email us and we will do the heavy lifting.



# Constructability Review Program

- Opportunity to discuss specific construction challenges early

## **Benefits**

- Work out potential field issues during design
- Enhanced communication
- Contractor input in Design
- Cost savings, risk reduction and/or schedule reduction.



Doug Cantrell, PE, PMP  
919-707-4814

# Example Project Overview

## US 70 Sinkhole



# Example Project Overview

## US 70 Sinkhole Constructability Goals

### Outcomes

- Pros and cons of repair alternatives
  - Cost estimates of repair alternatives
  - Construction schedule estimates of repair alternatives
  - Which options could work, and which options could not
- Addressed potential risks
- Identified safety issues
- Types of equipment needed to install shoring

# Constructability Review Program

- Want to schedule a Constructability Review? Call or email us:

919-707-4814

ValueManagementUnit@ncdot.gov

# Resource Conservation Program

- North Carolina General Statute (NC GS) 136-28.8
- NCDOT Standard Specifications Article 104-13
- Track the use of certain recycled materials to divert construction material away from landfills

## Benefits

- Divert construction waste from landfills
- Reuse or recycle construction materials
- Potential cost savings
- Positive communication opportunities by sharing data being reported



Alyson Tamer, PE, CPM  
919-707-4806



# Resource Conservation Program

**NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH**

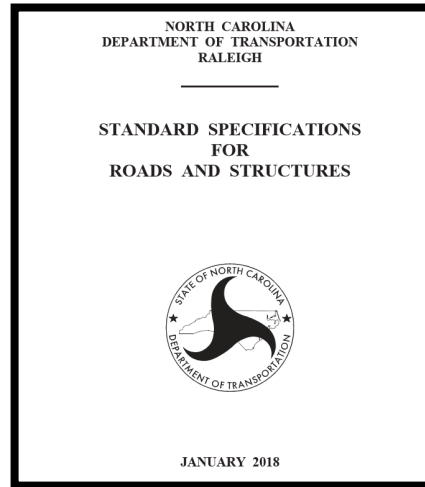
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**STANDARD SPECIFICATIONS  
FOR  
ROADS AND STRUCTURES**



**JANUARY 2018**

# Resource Conservation Program



## 16 104-13 RECYCLED PRODUCTS OR SOLID WASTE MATERIALS

17 It is the policy of the Department to aid in reduction of materials that become a part of our  
18 solid waste stream. To that extent the Department encourages contractors to initiate, develop  
19 and use products and construction methods that incorporate the use of recycled or solid waste  
20 products in the project. Recycled products or waste materials will be those products or  
21 materials that would otherwise become solid waste and are collected, separated, or processed  
22 and reused or returned to reuse in the form of raw materials or products that are incorporated  
23 into a beneficial reuse on the project. Targeted materials include, but are not limited to, the  
24 following: plastic, glass, paper, cardboard, shingles, tires, fly ash, bottom ash, sludge and  
25 construction and demolition debris.



# Resource Conservation Program

<https://connect.ncdot.gov/resources/Environmental/Pages/North-Carolina-Recycling-Locations.aspx>

Recycled Products & Solid Waste Utilization in Construction & Maintenance Projects Form

Submit your annual recycling report

Home > Connect NCDOT > Resources > Products > Recycled Products & Solid Waste Utilization in Construction & Maintenance

Each year, in accordance with General Statute 136-28.8, the Department publishes an Annual Recycled Products and Solid Waste Utilization Report and provides it to the Secretary of Transportation. This report summarizes the types and quantities of recycled and solid waste materials that were used during each state fiscal year ending June 30th.

The purpose of this form is to gather data to report the recycled, solid waste, and reused material utilized in each Division and compiled to be submitted as the Department's efforts to recycle construction and maintenance materials as a whole. All District Engineers, Resident Engineers, Roadside Environmental Engineers, and any other working sections within your Division that may have utilized recycled, solid waste, or reused materials in construction and maintenance projects should complete this form.

Thank you for reporting this data.

Recycle Form

Division #

Reporting Location

Recycle Form

Division #

Reporting Location

Fiscal Year

Mulch (for Wood)

cubic yards

Mulch (for Hyrdomulch)

bale

Compost Material

cubic yards

Recycled Concrete

tons

Crushed Glass

linear feet

Plastic Offset Blocks

each

Plastic Pipe (All Types and Sizes)

linear feet

Plastic Flexible Delineators

each

Type III Barricades

each

Crumb Rubber

pounds

Rubber Mulch

37

# Resource Conservation Program

## Recycle Form

Division #

Reporting Location

Fiscal Year

Mulch (for Wood)

cubic yards

Mulch (for Hyrdomulch)

bale

Compost Material

cubic yards

Signal Heads

Silt Fence Posts

each

Sheet Pile

square feet

Cable Guiderail

linear feet

Other

Other items not described

Submit

# Resource Conservation Program

Recycle Form

Signal Heads	
<div>Other</div> <div></div> <div>Other items not described</div>	
Mulch (for Hyrdomulch)	
	bale
Compost Material	
	cubic yards
Other	
	Other items not described
<div>Submit</div>	

# Resource Conservation Program

- If you have any questions about Recycling or reusing material or locating products with recycled content contact us at:

919-707-4806

ValueManagementUnit@ncdot.gov

- Recycling Form Website:

<https://connect.ncdot.gov/resources/Environmental/Pages/North-Carolina-Recycling-Locations.aspx>

# Value Engineering Program

- Required on all projects on the National Highway System with estimates >\$50M (> \$40M for bridge projects)

## Benefits

- Improved constructability
- Reduced schedule
- Reduced risk
- Reduced impacts
- Cost savings



Alyson Tamer, PE, CPM  
919-707-4806

# Post Construction Assessment Program

- Collect Lessons Learned and Best Management Practices
- Create feedback loops

## Benefits

- Save time and money
- Establish feedback loops
- Share valuable information at all phases of a project
- Provide enhanced communication



Clare Griffith, PE  
919-707-4812

# Risk Assessment Program

- A systematic process to develop a plan to address risks in projects, programs, or units
- Support Department in new endeavors

## Benefits

- Identify risks to address them
- Provide clarity to reduce risks
- Provide implementation plans



Alyson Tamer, PE, CPM  
919-707-4806



Program	Contact
Product Evaluation Program (PEP)	Ben Johnson, PE <a href="mailto:bljohnson2@ncdot.gov">bljohnson2@ncdot.gov</a> 919-707-4801
Constructability Review Program (CRP) Value Engineering Proposal Program (VEPP)	Doug Cantrell, PE, PMP <a href="mailto:dcantrell@ncdot.gov">dcantrell@ncdot.gov</a> 919-707-4814
Resource Conservation Program (RCP) Risk Assessment Program (RAP) Value Engineering Program (VEP)	Alyson Tamer, PE, CPM <a href="mailto:awtamer@ncdot.gov">awtamer@ncdot.gov</a> 919-707-4806
Post Construction Assessment Program (PCAP)	Clare Griffith, PE <a href="mailto:cgriffith@ncdot.gov">cgriffith@ncdot.gov</a> 919-707-4812
State Value Management Engineer	Jessica Kuse, PE, CPM <a href="mailto:Jkuse@ncdot.gov">Jkuse@ncdot.gov</a> 919-707-4810